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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/043,944	01/10/2002	Katsumi Kurematsu	1232-4808	6421

27123 7590 02/21/2003

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EXAMINER
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ART UNIT	PAPER NUMBER
2851	

DATE MAILED: 02/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N .	Applicant(s)	
	10/043,944	KUREMATSU, KATSUMI	
	Examiner	Art Unit	
	Michelle Nguyen	2851	

-- The MAILING DATE of this communication appears on the c ver sheet with the corresp ndence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 January 2002* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Objections

1. Claims 6, 8, 18, 19, 25, 27, 28 and 30 are objected to because of the following informalities:

(a) Claim 6 recites the limitation "the dynamic range" in line 5. There is insufficient antecedent basis for this limitation in the claim.

(b) In claim 8, line 10, the limitation "display apparatus" should be --display device-- because the limitation refers to the display device recited in line 4, and not the display apparatus recited in line 1.

(c) Claim 8 recites the limitation "the dynamic range" in lines 10-11. There is insufficient antecedent basis for this limitation in the claim.

(d) Claim 18 recites the limitation "the transmitted or reflected state of light" in line 3. There is insufficient antecedent basis for this limitation in the claim.

(e) Claim 18 recites the limitation "the optical type integrator" in line 16. There is insufficient antecedent basis for this limitation in the claim.

(f) In claim 18, line 17, "illuminating apparatus" should be --illuminating device-- to be in conformance with the claim terminology in line 6.

(g) In claim 19, line 4, "to" should be --and--.

(h) In claim 19, line 6, "to" should be --and--.

(i) Claim 25 recites the limitation "the movable stop means" in line 2. There is insufficient antecedent basis for this limitation in the claim.

(j) Claim 25 recites the limitation "the driving means" in line 4. There is insufficient antecedent basis for this limitation in the claim.

(k) Claim 27 recites the limitation "said luminance level calculation means" in line 2. There is insufficient antecedent basis for this limitation in the claim.

(l) Claim 28 recites the limitation "said luminance level calculation means" in line 2. There is insufficient antecedent basis for this limitation in the claim.

(m) In claim 30, line 2, "said light amount control means" should be --said projection light amount control means-- to be in conformance with the claim terminology in claim 18, line 14.

Appropriate correction is required.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the following features must be shown or canceled from the claims:

(a) the illuminating means having the light amount adjusting means (see claim 16)

(b) a screen (see claim 31)

No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 21 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 21 recites the limitation "wherein said projection optical system is a so-called schlieren optics" in lines 2-3. According to the McGraw-Hill Dictionary of Physics and Mathematics, the term "schlieren" is defined as follows: "In atmospheric optics, parcels or strata of air having densities sufficiently different from that of their surroundings so that they may be discerned by means of refraction anomalies in transmitted light" (see Pg. 867). It is not understood or supported from the claim, nor is it described elaborately in the disclosure, how or why the projection optical system is a schlieren optics in accordance with the above definition.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in-
> (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

> (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

6. Claims 1, 3, 5, 6, 8, 9, 11, 13, 14, 18-20, 22-24, 26, 27, 29-32, 34 and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,597,223 to Watanabe et al.

With regard to claims 1 and 32, Watanabe et al. disclose a projection type display apparatus including a projection optical system (projection lenses 110) for projecting image light from a display device (modulating device 108), the lenses 110 having light amount adjusting means (electric aperture stop 111) capable of substantially uniformly attenuating the image light in the cross-section thereof (see Col. 14, lines 60-3, Fig. 6B).

With regard to claims 3 and 34, Watanabe et al. teach the electric aperture stop 111 as discussed above with respect to claim 1 to have a variable stop comprising a plurality of displaceable (in the clockwise and counterclockwise directions) light intercepting plates (blades CB) arranged in the cross-section (see Col. 15, lines 17-23, Figs. 6B, 8A-8C).

With regard to claims 5 and 36, Watanabe et al. teach the electric aperture stop 111 as discussed above with respect to claim 1 to have a stop variable in aperture diameter (see Col. 15, lines 17-23).

With regard to claim 6, Watanabe et al. teaches a write signal to the modulating device 108 to be modulated in synchronism with the adjustment of the electric aperture

stop 111 so that the dynamic range about luminance may change (see Col. 17, lines 33-51, Fig. 6B).

With regard to claim 8, Watanabe et al. disclose a projection type display apparatus comprising:

a projection optical system (lenses 110) for projecting image light from a display device (modulating device 108) (see Fig. 6B);

light amount adjusting means (electric aperture stop 111) for adjusting the amount of the image light (see Fig. 6B); and

control means (display controller 121) for attenuating the amount of light of the whole of the image light by the electric aperture stop 111 and modulating a write signal to the modulating display 108 so that the dynamic range about the luminance may be expanded (see Col. 14, lines 60-3, Col. 15, lines 24-33, Col. 17, lines 33-51, Col. 17, line 67 to Col. 18, line 7, Fig. 6B).

With regard to claim 9, Watanabe et al. teach the electric aperture stop 111 as discussed above with respect to claim 8 to substantially uniformly attenuate the image light in the cross-section thereof (see Col. 14, lines 60-3, Fig. 6B).

With regard to claim 11, Watanabe et al. teach the electric aperture stop 111 as discussed above with respect to claim 9 to have a variable stop comprising a plurality of displaceable (in the clockwise and counterclockwise directions) light intercepting plates (blades CB) arranged in the cross-section (see Col. 15, lines 17-23, Figs. 6B, 8A-8C).

With regard to claim 13, Watanabe et al. teach the electric aperture stop 111 as discussed above with respect to claim 8 to have a stop variable in aperture diameter (see Col. 15, lines 17-23).

With regard to claim 14, Watanabe et al. teach the projection lenses 10 as discussed above with respect to claim 8 to have the electric aperture stop 111 (see Fig. 6B).

With regard to claim 18, Watanabe et al. disclose a projection type display apparatus comprising:

a light modulating element (modulating device 108) for controlling a transmitted or reflected state of light to thereby display a gradation image (see Col. 2, lines 57-9, Fig. 6B);

an illuminating device (lamp 102) for applying light to the modulating device 108 (see Col. 14, lines 38-41, Fig. 6B);

a projection optical system (lenses 110) for projecting the transmitted light or reflected light of the light applied to the modulating device 108 (see Fig. 6B);

write signal processing means (modulating device driver 107) for modulation-processing a write signal to the modulating device 108 (see Col. 14, lines 41-4, Fig. 6B);

projection light amount control means (aperture stop driver 123, electric aperture stop 111) for controlling the amount of light in the optical path between an optical type integrator (collimator lens 103) of the lamp 102 to the lenses 110 (see Col. 14, line 64 to Col. 15, line1, Fig. 6B); and

control signal generating means (display controller 121) for controlling the modulating device driver 107 and the aperture stop driver 123 and the electric aperture stop 111 (see Col. 17, lines 33-51, Fig. 6B);

wherein the display controller 121 generates a control signal on the basis of the luminance level of an input image signal so as to make the amount of projection light great and the modulation of the write signal small when the luminance level is high, and to make the amount of projection light small and the modulation of the write signal great when the luminance level is low (see Col. 5, lines 46-8, Col. 12, line 57 to Col.13, line 3).

With regard to claim 19, Watanabe et al. teach the aperture stop driver 123 and electric aperture stop 111 as discussed above with respect to claim 18 to adjust the amount of light in the optical path between the lamp 102 to the modulating device 108 and/or between the modulating device 108 to the lenses 110 (see Col. 14, line 54 to 15, line 1, Fig. 6B).

With regard to claim 20, Watanabe et al. teach the aperture stop driver 123 and the electric aperture stop 111 as discussed above with respect to claim 18 to uniformly intercept a light source image formed by the collimator lens 103 (see Col. 14, lines 38-63, Fig. 6B).

With regard to claim 22, Watanabe et al. teach the projection light amount control means as discussed above with respect to claim 18 to have a movable stop means (electric aperture stop 111) and stop driving means (aperture stop driver 123) (see Fig. 6B).

With regard to claim 23, Watanabe et al. teach the aperture stop driver 123 and the electric aperture stop 111 as discussed above with respect to claim 18 to be disposed at a position which is not in conjugate relationship with the modulating device 108 (see Fig. 6B).

With regard to claim 24, Watanabe et al. teach the aperture stop driver 123 and the electric aperture stop 111 to control the amount of stop in conformity with the luminance level of the input image signal (see Col. 12, lines 9-15, 48-53).

With regard to claim 26, Watanabe et al. teach the display controller 121 as discussed above with respect to claim 18 to have luminance level calculation means for calculating the luminance level of the input image signal, and projection light amount calculation means for calculating the amount of the projection light emerging from the lenses 110 in conformity with the calculated luminance level, and to generate the control signal of the aperture stop driver 123 and the electric aperture stop 111 on the basis of the amount of projection light calculated in the projection light amount calculation means, and to generate the control signal of the modulating device driver 107 on the basis of the luminance level calculated in the luminance level calculation means and the calculated amount of projection light (see Col. 16, line 43 to Col. 18, line 7).

With regard to claim 27, Watanabe et al. teaches the display controller 121 as discussed above with respect to claim 18 to comprise luminance level calculation means for calculating the maximum value of the luminance signal of each pixel in each field or each frame of an image signal as maximum luminance (see Col. 16, line 43 to Col. 17, line 18).

With regard to claim 29, Watanabe et al. teach the modulating device driver 107 as discussed above with respect to claim 18 to modulate the write signal so as to amplify it at an amplification factor substantially inversely proportional to the amount of projection light (see Col. 12, line 57 to Col. 13, line 3).

With regard to claim 30, Watanabe et al. teach the electric aperture stop 111 as discussed above with respect to claim 18 to be disposed at the pupil position of the lenses 110 (see Fig. 6B).

With regard to claim 31, Watanabe et al. disclose a projection type display apparatus comprising:

a projection optical system (lenses 110) for projecting an image onto a screen (screen SC) (see Fig. 6B); and

light amount control means (electric aperture stop 111) for uniformly intercepting a light source image projected onto the pupil of the lenses 110 (see Fig. 6B).

7. Claims 1-3, 5-11, 13-15, 17-34 and 36 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Application Publication No. 2002/0044261 to Ouchi et al. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

With regard to claims 1 and 32, Ouchi et al. disclose a projection type display apparatus including a projection optical system (projection optical system PL1) for projecting image light from a display device (optical modulator P), the projection optical

system PL1 having light amount adjusting means (light quantity control means 20) capable of substantially uniformly attenuating the image light in the cross-section thereof (see Fig. 1).

With regard to claims 2 and 33, Ouchi et al. teach the light quantity control means 20 as discussed above with respect to claims 1 and 32, respectively, to have a variable stop (movable diaphragm means 20a) comprising a plurality of tiltable light intercepting plates (blind members 51) arranged in the cross-section (see Paragraph 0035, Figs. 5a, 5b).

With regard to claims 3 and 34, Ouchi et al. teach the light quantity control means 20 as discussed above with respect to claims 1 and 32, respectively, to have a variable stop (movable diaphragm means 20a) comprising a plurality of displaceable light intercepting plates (sectors 40) arranged in the cross-section (see Paragraph 0034, Fig. 4).

With regard to claims 5 and 36, Ouchi et al. teach the light quantity control means 20 as discussed above with respect to claims 1 and 32, respectively, to have a stop (movable diaphragm means 20a) variable in aperture diameter (see Fig. 4).

With regard to claim 6, Watanabe et al. teach the apparatus as discussed above with respect to claim 1, wherein a write signal to the optical modulator P is modulated in synchronism with the adjustment of the light quantity control means 20 so that the dynamic range about luminance may change (see Paragraphs 0028, 0036, 0037).

With regard to claim 7, Ouchi et al. teach the apparatus as discussed above with respect to claim 1, wherein the optical modulator P includes a light modulating element

(understood to comprise an optical modulator) and illuminating means for illuminating the light modulating element with light from a light source (lighting unit BL1), and the illuminating means has a first optical system (fly eye integrators 6A, 6B) for forming a plurality of light source images (understood to result from the use of fly eye lenses) by the light from the lighting unit BL1, and a second optical system (converging reflection mirror 7) for superimposing the beams from the plurality of light source images on the light modulating element, and the light quantity control means is disposed at a position whereat the plurality of light source images are projected (see Fig. 1).

With regard to claim 8, Ouchi et al. disclose a projection type display apparatus comprising:

a projection optical system (projection optical system PL1) for projecting image light from a display device (optical modulator P) (see Fig. 1);

light amount adjusting means (light quantity control means 20) for adjusting the amount of said image light (see Fig. 1); and

control means (control signal generation means 30) for attenuating the amount of light of the whole of said image light by the light quantity control means 20 and modulating a write signal to the optical modulator P so that the dynamic range about luminance may be expanded (see Paragraph 0037, Fig. 1).

With regard to claim 9, Ouchi et al. teach the light quantity control means 20 as discussed above with respect to claim 8 to substantially uniformly attenuate the image light in the cross-section thereof (see Paragraphs 0037, 0045, Fig. 1).

With regard to claim 10, Ouchi et al. teach the light quantity control means 20 as discussed above with respect to claim 9 to have a variable stop (movable diaphragm means 20a) comprising a plurality of tiltable light intercepting plates (blind members 51) arranged in the cross-section (see Paragraph 0035, Figs. 5a, 5b).

With regard to claim 11, Ouchi et al. teach the light quantity control means 20 as discussed above with respect to claim 9 to have a variable stop (movable diaphragm means 20a) comprising a plurality of displaceable light intercepting plates (sectors 40) arranged in the cross-section (see Paragraph 0034, Fig. 4).

With regard to claim 13, Ouchi et al. teach the light quantity control means 20 as discussed above with respect to claim 8 to have a stop (movable diaphragm means 20a) variable in aperture diameter (see Fig. 4).

With regard to claim 14, Ouchi et al. teach the projection optical system PL1 as discussed above with respect to claim 8 to have the light quantity control means 20 (see Fig. 1).

With regard to claim 15, Ouchi et al. teach the apparatus as discussed above with respect to claim 8, wherein the optical modulator P includes a light modulating element (understood to comprise an optical modulator) driven in conformity with an image signal (see Fig. 1), and illuminating means for illuminating the light modulating element with light from a light source (lighting unit BL1), and the illuminating means has a first optical system (fly eye integrators 6A, 6B) for forming a plurality of light source images (understood to result from the use of fly eye lenses) by the light from the lighting unit BL1, and a second optical system (converging reflection mirror 7) for superimposing

the beams from the plurality of light source images on the light modulating element, and the light quantity control means is disposed at a position whereat the plurality of light source images are projected (see Fig. 1).

With regard to claim 17, Ouchi et al. teach the projection optical system PL1 as discussed above with respect to claim 15 to have the light quantity control means 20 (see Fig. 1).

With regard to claim 18, Ouchi et al. disclose a projection type display apparatus comprising:

a light modulating element (optical modulator P) for controlling a transmitted or reflected state of light to thereby display a gradation image (see Fig. 1);

an illuminating device (light unit BL1) for applying light to the optical modulator P (see Fig. 1);

a projection optical system (projection optical system PL1) for projecting the transmitted light or reflected light of the light applied to the optical modulator P (see Fig. 1);

write signal processing means (write signal processing means 10) for modulation-processing a write signal to optical modulator P (see Fig. 1);

projection light amount control means (projected light quantity control means 20) for controlling the amount of light in the optical path between an optical type integrator (fly eye lenses 6a, 6b) of the light unit BL1 to said projection optical system PL1 (see Fig. 1);

and control signal generating means (control signal generation means 30) for controlling the write signal processing means 10 and said projected light quantity control means 20 (see Fig. 1);

wherein the control signal generation means 30 generates a control signal on the basis of the luminance level of an input image signal so as to make the amount of projection light great and the modulation of the write signal small when the luminance level is high, and to make the amount of projection light small and the modulation of the write signal great when said luminance level is low (see Paragraph 0028).

With regard to claim 19, Ouchi et al. teach the light quantity control means 20 as discussed above with respect to claim 18 to adjust the amount of light in the optical path between light unit BL1 to the optical modulator P and/or between the optical modulator P to said projection optical system PL1 (see Fig. 1).

With regard to claim 20, Ouchi et al. teach the light quantity control means 20 as discussed above with respect to claim 18 to uniformly intercept a light source image formed by fly eye lenses 6a, 6b (see Fig. 1).

With regard to claim 21, Ouchi et al. teach the projection optical system PL1 as discussed above with respect to claim 18 to be a so-called schlieren optics (see Paragraph 0029).

With regard to claim 22, Ouchi et al. teach the light quantity control means 20 as discussed above with respect to claim 18 to have a movable stop means (movable diaphragm means 20a) and stop driving means (diaphragm drive means 20b) (see Fig. 1).

With regard to claim 23, Ouchi et al. teach the light quantity control means 20 as discussed above with respect to claim 18 to be disposed at a position which is not in conjugate relationship with the optical modulator P (see Paragraph 0029).

With regard to claim 24, Ouchi et al. teach the light quantity control means 20 as discussed above with respect to claim 18 to control the amount of stop in conformity with the luminance level of the input image signal (see Paragraph 0029).

With regard to claim 25, Ouchi et al. teach the light quantity control means 20 as discussed above with respect to claim 18 to have movable stop means (movable diaphragm means 20a) and stop driving means (diaphragm drive means 20b), wherein the movable diaphragm means 20a is a stripe stop and the drive means 20b is a cam motor or an ultrasonic motor (see Paragraph 0035).

With regard to claim 26, Ouchi et al. teach the control signal generation means 30 as discussed above with respect to claim 18 to have luminance level calculation means (brightness level computing means 30a) for calculating the luminance level of the input image signal, and projection light amount calculation means (projected light quantity computing means 30b) for calculating the amount of projection light emerging from the projection optical system PL1 in conformity with the calculated luminance level, and to generate the control signal of the light quantity control means 20 on the basis of the amount of projection light calculated in the light quantity computing means 30b, and to generate the control signal of the write signal processing means 10 on the basis of the luminance level calculated in the brightness level computing means 30a and the calculated amount of projection light (see Paragraphs 0028, 0030, Fig. 1).

With regard to claim 27, Ouchi et al. teach the apparatus as discussed above with respect to claim 18, wherein luminance level calculation means (brightness level computing means 30a) calculates the maximum value of the luminance signal of each pixel in each field or each frame of an image signal as maximum luminance (see Paragraph 0031).

With regard to claim 28, Ouchi et al. teach the apparatus as discussed above with respect to claim 18, wherein luminance level calculation means (brightness level computing means 30a) calculates the cumulative histogram of the luminance signal of each pixel in each field or each frame of an image signal, and calculates a luminance level at which said cumulative histogram becomes constant or greater as maximum luminance (see Paragraphs 0031, 0032, Figs 3A, 3B).

With regard to claim 29, Ouchi et al. teach the write signal processing means 10 as discussed above with respect to claim 18 to modulate the write signal so as to amplify it at an amplification factor substantially inversely proportional to said amount of projection light (see Paragraph 0033).

With regard to claim 30, Ouchi et al. teach the light quantity control means 20 as discussed above with respect to claim 18 to be disposed at the pupil position of the projection optical system PL1 (see Fig. 1).

With regard to claim 31, Ouchi et al. disclose a projection type display apparatus comprising:

a projection optical system (projection optical system PL1) for projecting an image onto a screen (see Fig. 1); and

light amount control means (light quantity control means 20) for uniformly intercepting a light source image projected onto the pupil of the projection optical system PL1 (see Fig. 1).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 2, 10, 25 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al. as applied to claims 1, 9, 18 and 32 above, respectively, and further in view of U.S. Patent No. 3,121,798 to Ploke.

With regard to claims 2, 10 and 33, Watanabe et al. do not teach the electric aperture stop 111 as discussed above with respect to claims 1, 9 and 32, respectively, to have a variable stop comprising a plurality of tiltable light intercepting plates. Instead, Watanabe et al. teach the electric aperture stop 111 to have a stop variable in aperture diameter (see Col. 15, lines 17-23). However, Ploke discloses a light amount adjusting means (Venetian blind structure) analogous to the electric aperture stop 111 of Watanabe et al. (see Col. 1, lines 28-30, Fig. 1). Ploke teaches the Venetian blind structure to have a variable stop comprising a plurality of tiltable light intercepting plates (vertically positioned slats 2) (see Col. 1, lines 28-38, Fig. 1). Ploke further teaches substituting the Venetian blind structure for an iris diaphragm to achieve uniform illumination, and thereby also teaches a Venetian blind structure and an iris diaphragm

art-recognized equivalents with respect to function (see Col. 1, lines 14-38). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute for the electric aperture stop of Watanabe et al. the Venetian blind structure of Ploke for providing an alternate means for achieving uniform illumination.

With regard to claim 25, Watanabe et al. teach the projection light amount control means as discussed above with respect to claim 18 to have movable stop means (electric aperture stop 111) and driving means (aperture stop driver 123), but teach neither the electric aperture stop 111 to be a stripe stop nor the aperture stop driver 123 to be a cam motor or an ultrasonic motor (see Fig. 6B). However, Ploke discloses projection light amount control means having movable stop means (Venetian blind structure) and driving means (gears 29-31, knob 32) analogous to the electric aperture stop 111 and the aperture stop driver 123 of Watanabe et al., wherein the Venetian blind structure is a stripe stop and the driving means is a cam motor or an ultrasonic motor (see Col. 3, lines 62-75, Figs. 1, 3, 7). Ploke teaches substituting the Venetian blind structure for an iris diaphragm as disclosed by Watanabe et al. to achieve uniform illumination, and thereby also teaches a Venetian blind structure and an iris diaphragm art-recognized equivalents with respect to function (see Col. 1, lines 14-38). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute for the electric aperture stop and the aperture stop driver of Watanabe et al. the Venetian blind structure and the gears and knob of Ploke for providing an alternate means for achieving uniform illumination.

10. Claims 4, 12 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al. as applied to claims 1, 9 and 32 above, respectively, and further in view of U.S. Patent No. 6,017,123 to Bleha et al.

With regard to claims 4, 12 and 35, Watanabe et al. do not teach the electric aperture stop 111 as discussed above with respect to claims 1, 9 and 32 to have an ND filter means variable in transmittance. Instead, Watanabe et al. teach the electric aperture stop 111 to have a stop variable in aperture diameter for attenuating light passing therethrough (see Col. 14, lines 60-3). However, Bleha et al. disclose a light amount adjusting means (blending device 420) analogous to the electric aperture stop 111 of Watanabe et al. (see Fig. 17). Bleha et al. teach the blending device 420 to have an ND filter means variable in transmittance for attenuating light passing therethrough, thereby teaching the blending device of Bleha et al. and the electric aperture stop of Watanabe et al. to be art-recognized equivalents with respect to function (see Col. 6, lines 45-8, 54-7, Col. 7, lines 24-32). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute for the electric aperture stop of Watanabe et al. the blending device of Bleha et al. for providing an alternate means for attenuating light.

11. Claims 4, 12 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ouchi et al. as applied to claims 1, 9 and 32 above, respectively, and further in view of U.S. Patent No. 6,017,123 to Bleha et al.

With regard to claims 4, 12 and 35, Ouchi et al. do not teach the light quantity control means 20 as discussed above with respect to claims 1, 9 and 32 to have an ND

filter means variable in transmittance. Instead, Ouchi et al. teach the light quantity control means 20 to have a stop variable in aperture diameter for attenuating light passing therethrough (see Figs. 1, 4). However, Bleha et al. disclose a light amount adjusting means (blending device 420) analogous to the electric aperture stop 111 of Watanabe et al. (see Fig. 17). Bleha et al. teach the blending device 420 to have an ND filter means variable in transmittance for attenuating light passing therethrough, thereby teaching the blending device of Bleha et al. and the electric aperture stop of Watanabe et al. to be art-recognized equivalents with respect to function (see Col. 6, lines 45-8, 54-7, Col. 7, lines 24-32). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute for the light quantity control means 20 of Ouchi et al. the blending device of Bleha et al. for providing an alternate means for attenuating light.

12. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ouchi et al.

With regard to claim 16, Ouchi et al. do not teach the illuminating means as discussed above with respect to claim 15 to have the light quantity control means 20. Instead, Ouchi et al. teach the projection optical system PL1 to have the light quantity control means 20. However, it would have been an obvious matter of design choice for one having ordinary skill in the art at the time the invention was made to construct the apparatus of Ouchi et al. such that the illuminating means instead of the projection optical system has the light quantity control means. Applicant has not disclosed that the specific location of the light quantity control means solves any stated problem or is for

any particular purpose and it appears that the invention would perform equally well with the illuminating means having the light quantity means (see applicant's specification, page 24, lines 11-20).

Double Patenting

13. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

14. Claims 18, 21, 22, 23, 24, 25, 26, 27, 28 and 29 of the instant application are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2, 3, 4, 5, 7, 11, 12, 13 and 14, respectively, of copending Application No. 09/957,240 to Ouchi et al. Although the conflicting claims are not identical, they are not patentably distinct from each for the following reasons:

With regard to claim 18 of the instant application,

the light modulating element is met by the optical modulator of Ouchi et al.;

the illuminating device is met by the lighting unit of Ouchi et al.;

the projection optical system is met by the projection optical system of Ouchi et al.;

the write signal processing means of Ouchi et al. reads on the write signal processing means of the instant application;

the projected light quantity control means of Ouchi et al. reads on the projection light amount control means of the instant application; and

the control signal generation means of Ouchi et al. reads on the control signal generating means of the instant application (see claim 1).

With regard to claim 21 of the instant application, the projection optical system is met by the projection system of Ouchi et al. (see claim 2).

With regard to claim 22 of the instant application, the movable stop means is met by the movable diaphragm means of Ouchi et al., and stop driving means is met by the diaphragm drive means of Ouchi et al. (see claim 3),

With regard to claim 23 of the instant application, the position of the projection light amount control means with respect to the light modulating element is met by the position of the projected light quantity control means with respect to the optical modulator of Ouchi et al. (see claim 4).

With regard to claim 24 of the instant application, the projection light amount control means is met by the projected light quantity control means (see claim 5).

With regard to claim 25, the movable stop means and the driving means are met by the movable diaphragm means and the diaphragm drive means, respectively, of Ouchi et al. (see claim 7).

With regard to claim 26, the control signal generating means is met by the control signal generation means of Ouchi et al., the luminance level calculation means is met by the brightness level computing/processing means of Ouchi et al., and the projection light amount calculation means is met by the projected light quantity computing/processing means of Ouchi et al. (see claim 11).

With regard to claim 27, the luminance level calculation means is met by the brightness level computing/processing means of Ouchi et al. (see claim 12).

With regard to claim 28, the luminance level calculation means is met by the brightness level computing/processing means of Ouchi et al., and the cumulative histogram is met by the cumulative histogram of Ouchi et al. (see claim 13).

With regard to claim 29, the write signal processing means is met by the write signal processing means of Ouchi et al. (see claim 14).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

15. The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

U.S. Patent No. 5,798,805 to Ooi et al.

U.S. Patent No. 5,379,083 to Tomita

Japanese Patent Publication No. 04-291333 to Kamakura

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michelle Nguyen whose telephone number is 703-305-2771. The examiner can normally be reached on M-F 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams can be reached on 703-308-2847. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4900.

mpn
February 13, 2003

RUSSELL ADAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800